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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,523	06/15/2001	Marek Minarik	MLD-044	9938
3897	7590	03/16/2004	EXAMINER	
SCHNECK & SCHNECK P.O. BOX 2-E SAN JOSE, CA 95109-0005			CHOI, LING SIU	
			ART UNIT	PAPER NUMBER

1713

DATE MAILED: 03/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/882,523

Applicant(s)

MINARIK ET AL.

Examiner

Ling-Siu Choi

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 17 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Claims 1-17 are now pending, wherein claims 1-17 are drawn to a method for electrophoretic separation of a mixture of oligonucleotide fragments.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Barry et al. [Journal of Chromatography A, 732, 159-166(1996)], Zhu et al. (US 5,089,111), or Madabhushi et al. (US 5,567,292).

The present invention relates to a **method** for electrophoretic separation of a mixture of oligonucleotide fragments having different lengths **between 0 and 100 bases**, comprising

(a)	filling a microchannel with a separation media comprising <b>non-entangled pyvinylpyrrolidone</b>
(b)	injecting the mixture of oligonucleotide fragments into a first end of the microchannel
(c)	applying an electrophoretic current sufficient to cause the oligonucleotide fragments to migrate through the separation media
(d)	detecting separated oligonucleotide fragments at an end removed from the injection end

(summary of claim 1)

Barry et al. disclose a method to separate oligonucleotides by capillary electrophoresis in a polyvinylpyrrolidone matrix in a coated fused-silica column, wherein the **polyvinylpyrrolidone** is in a pseudo phase formed through hydrogen bonding, dipole-dipole, dipole-induced dipole, and hydrophobic interactions and wherein the **oligonucleotide has 4-6 bases** in length (abstract; page 160, first col.). Barry et al. further disclose that an electrospray mass spectrometry is used to identify oligonucleotides (page 159, col. 2).

Zhu et al. disclose a method to separate a mixture of polynucleotide chains having **about 10 to about 10,000 base pairs**, the method comprising electrophoretically passing the mixture through a capillary column containing a **gel-free aqueous solution of a substantially linear polymer** which can be **polyvinylpyrrolidone**, wherein the detection is performed on line in the capillary by UV absorption (col. 3, line 9; col. 4, lines 63-64; claim 16).

Madabhushi et al. a method to separate different-sized polynucleotides by electrophoresis in an uncoated silica capillary, the method comprising the steps of (a) providing an uncoated silica capillary containing a separation medium containing one or more uncharged water-soluble silica-adsorbing polymer such as polyvinylpyrrolidone, (b) loading a sample of different-sized polynucleotide in the uncoated silica capillary, and (c) applying an electrical field between the first and second ends of the uncoated silica capillary so that the different-sized polynucleotides in the sample migrate through the uncoated silica capillary, wherein the detection is based on UV absorption, fluorescence emission, conductance, radioactive emission; the nucleotide more preferably has about 20 to 600 bases; denaturants may be used to prevent the formation of duplexes or secondary structures in polynucleotides (col. 8, lines 11-14 and 22-26; claims 4 and 10).

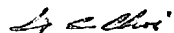
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Thus, the present claims are anticipated by the disclosure of Barry et al., Zhu et al., or Madabhushi et al...

*Conclusion*

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.



Ling -Siu Choi

March 5, 2004